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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,922	06/13/2001	Karin Angela Hing	HING3001/REF	8656

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625 Slaters Lane  
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Alexandria, VA 22314

10/11/2002

EXAMINER

FIORILLA, CHRISTOPHER A

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 10/11/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-9

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/787,922		HING ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Christopher A. Fiorilla		1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it contains language which may be implied (i.e. "The present invention relates to...") and legal phraseology (i.e. "comprises").

Correction is required. See MPEP § 608.01(b).

3. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. See 37 CFR 1.75(i). See MPEP 608.01(m). The elements of 1(a) should be separated by line indentations.

In claim 19, the word "been" has been misspelled.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10

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USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 3,13,15,25,26 and 27 recite a broad recitation, and the claims also recites "preferably..." which is the narrower statement of the range/limitation.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 1 and 4-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/04013 in view of Oishi et al. (5,895,897).

WO 93/04013 teaches the basic claimed process of producing a ceramic foam. The process disclosed by WO 93/04013 includes the steps of:

forming a ceramic slip having a viscosity of 5-1000 mPa.s comprising:

ceramic particulate,  
an organic binder,  
liquid carrier, and  
surfactants

foaming the ceramic slip; and

heating the foamed ceramic slip at a temperature sufficient to substantially burn out the organic binder. WO 93/04013 also discloses the addition of a gas generating substance (item 5, page 8); the use of hydroxyapatite (p.5, line 24); particle sizes of e.g. 5  $\mu\text{m}$  (page 5); the liquid carrier is water (page 6); the addition of a deflocculating agent (page 8, line 20); drying the foam prior to removing binder (Example II); sintering the foam (Example VIII) and porosities of 20 to 95% (page 11, line 8).

WO 93/04013 does not disclose that the slip is foamed using a ball mill but generically discloses that the slip may be foamed mechanically (e.g. page 5, line 4).

Oishi et al. discloses foaming a slip using a ball mill to produce a foam having pore sizes of 100-2000 $\mu\text{m}$ . It would have been obvious to one skilled in the art at the time of the invention to use this method of foaming in view of the generic disclosure of WO 93/04013 to produce articles with the claimed pore sizes.

Determination of the specific particle surface area, ingredient amounts and firing temperatures would have been well within the realm of routine experimentation to one having

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ordinary skill in the art at the time of the invention. These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

The use of mold release agents and the claimed binder materials are notoriously well known in the art of molding ceramics. It would have been obvious to use these materials in the process of WO 93/04013 to optimize the process in view of the generic disclosure therein.

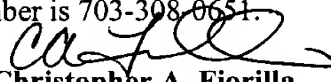
7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/04013 in view of Oishi et al. (5,895,897) as applied to claims 1 and 4-27 above, and further in view of Wu (5,656,562).

Wu discloses the use of alumina media having a 12.7 mm size for use in a ball mill (col. 5, lines 33-34). It would have been obvious to one skilled in the art at the time of the invention to use this type of media in the process of WO 93/04013 in view of the generic disclosure therein.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Fiorilla whose telephone number is 703-308-0674. The examiner can normally be reached on M-F, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
**Christopher A. Fiorilla**  
**Primary Examiner**  
**Art Unit 1731**